

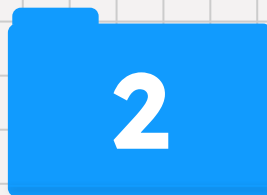
Dress Code: Your Virtual Fashion Assistant

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Problem
Statement



Datasets and
Sources



Methodology



Results &
Challenges



Conclusion &
Future Work

Problem Statement



Problem Statement

It can often be difficult to think of new outfit ideas that are trendy, weather and occasion appropriate, and utilize the clothes from your existing closet.

Our project seeks to create an **interactive virtual fashion stylist** powered by LLMs, showcasing how these models can combine personal context, external data, and natural language interaction to **solve everyday styling challenges**.



Datasets and Sources



















































Fashion MNIST

- 60,000 train / 10,000 test images
- 28×28 grayscale (784 pixels total)
- Pixel values: 0 (white) to 255 (black)
- Classes (0–9):
 - T-shirt/top, Trouser, Pullover, Dress, Coat, Sandal, Shirt, Sneaker, Bag, Ankle boot



Open-Meteo Weather API

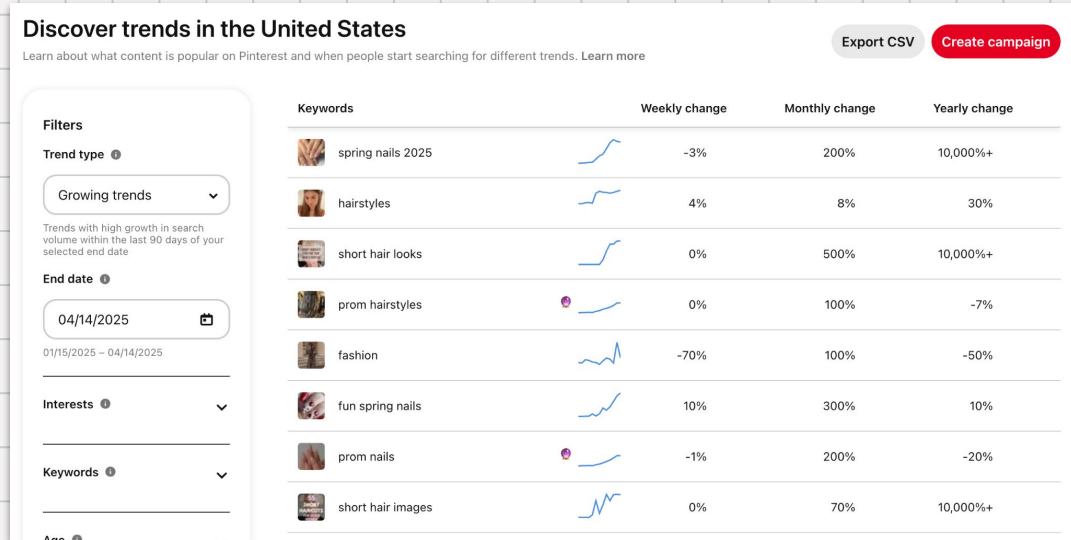
- Free, open-source weather API
- Provides forecast and historical weather data
- Data includes: Temperature, wind speed, humidity, precipitation, cloud cover, UV index, etc.
- Supports hourly and daily granularity
- Query by location

	L : 13.7°C H : 20.5°C		Clear : 6.75 Avg. : 6.4		Max : 84% Min : 84%		△ 04:57 ▽ 21:13
Now	 20.0°C	 0.1 mm	 1.36 4 m/s	 0.281 m³ 21.3 °C			
16	 18.3°C	 1.0 mm	 .92 4 m/s	 0.292 m³ 20.4 °C			
17	 19.2°C	 0.0 mm	 1.37 3.49 m/s	 0.299 m³ 19.9 °C			
18	 19.9°C	 0.0 mm	 1.28 3.31 m/s	 0.298 m³ 20.0 °C			
19	 19.4°C	 0.0 mm	 1.47 3.6 m/s	 0.296 m³ 20.1 °C			
20	 18.9°C	 0.0 mm	 1.41 3.1 m/s	 0.294 m³ 19.6 °C			
21	 18.1°C	 0.0 mm	 1.14 2.95 m/s	 0.293 m³ 19.1 °C			
22	 17.6°C	 0.0 mm	 .88 2.38 m/s	 0.293 m³ 18.5 °C			
23	 16.7°C	 0.0 mm	 .77 1.84 m/s	 0.292 m³ 17.9 °C			
00	 16.0°C	 0.0 mm	 .73 1.58 m/s	 0.292 m³ 17.2 °C			
01	 15.2°C	 0.0 mm	 .72 1.48 m/s	 0.292 m³ 16.7 °C			



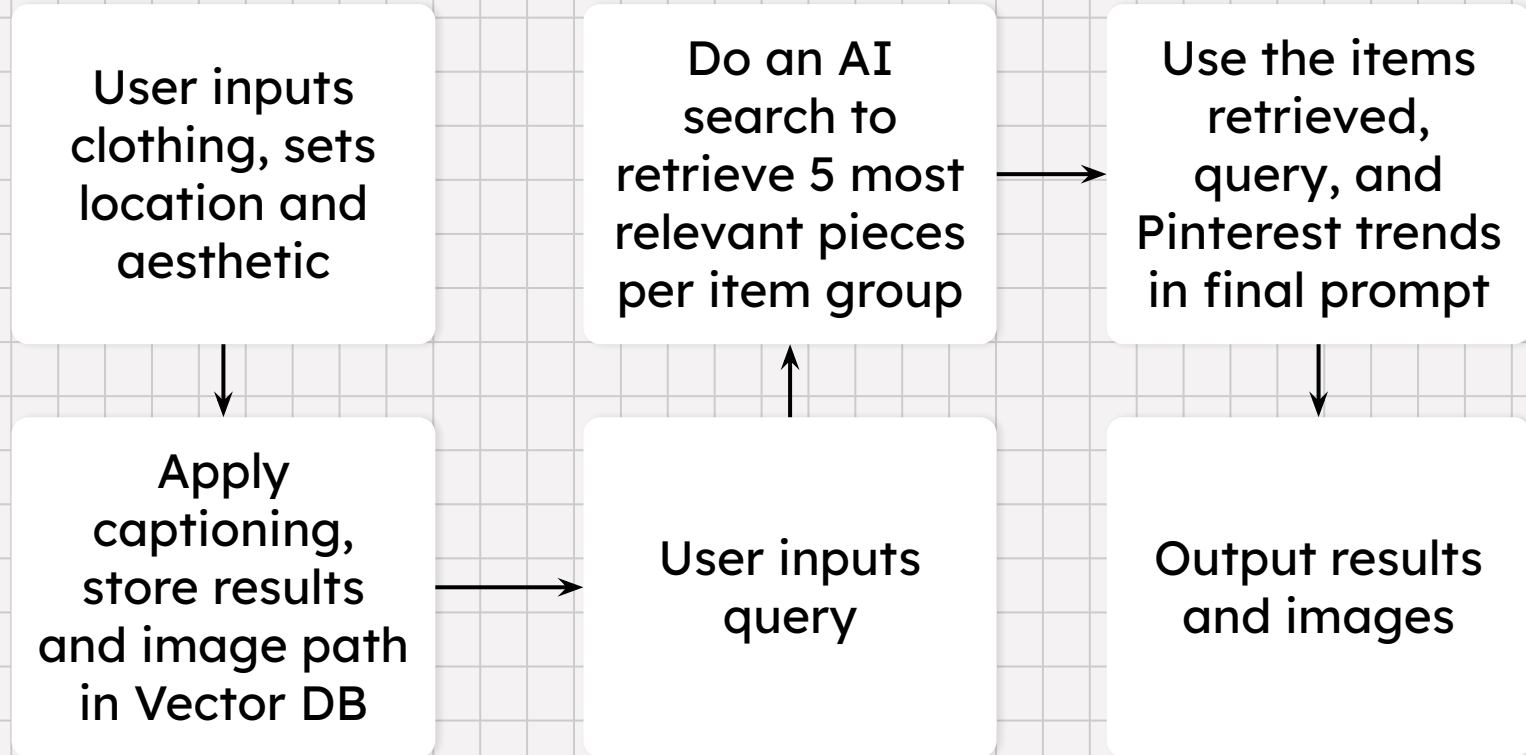
Pinterest Trends

- Sourced from trends.pinterest.com
 - Trends Type: Growing trends
 - Date Range: 90 days before April 7, 2025
 - Interests: Women's Fashion, Men's Fashion
 - Subset: Top 50 trends selected
- CSV format with trending fashion search terms
- Columns: date, trend, popularity scores



Methodology

Methodology



System Architecture

Image and Embedding Models

BLIP-2: Vision-language model used to generate answers from images and text prompts

- Used for captioning clothing items

CLIP: Model to map images and text into a shared embedding space

- Used for vector embeddings and similarity searches

Vector Database

ChromaDB: open-source vector database designed to store and retrieve vector embeddings

Large Language Model

OpenAI: leveraged OpenAI's 4o-mini (~8B params) model for agentic responses and outfit recommendations



Results & Challenges

Example #1

Query: “I’m going for a long walk through the park.”

Location: Charlottesville, VA

User: John

Aesthetic: Vintage



Example #1

For a long walk through the park in warm weather (high of 84°F) with a casual event formality and a vintage aesthetic, I recommend the following outfit:

1. **Shirt: Striped Tee (Brown)**
 - Reason: The striped tee is lightweight and breathable, making it perfect for warm weather. Its casual style aligns with the event formality and adds a vintage touch.
2. **Pants: Sassy Joggers (Brown)**
 - Reason: Joggers are comfortable for walking and provide a relaxed fit. The brown color complements the tee and maintains a cohesive, vintage-inspired look.
3. **Shoes: Nike Swoosh (Green)**
 - Reason: These shoes are sporty and comfortable for walking. The green adds a fresh pop of color that works well with the brown and maintains a casual vibe.
4. **Jacket: Blue Jacket with Patch**
 - Reason: While the weather is warm, having a light jacket on hand is useful for any cooler breezes. The blue color is classic and fits the vintage style, while the patch detail adds a trendy touch.

This outfit combines comfort and style, suitable for a casual outdoor activity while ensuring you stay cool and stylish.

Example #1



Example #2

Query: “I’m going to a music festival.”

Location: Coachella, CA

User: Gabby

Aesthetic: Edgy



Example #2

For the music festival, considering the warm weather (High: 92°F, Low: 66°F), casual formality, and an edgy aesthetic, here's the best outfit recommendation:

Outfit Components:

1. Top: Brown Henley Top
 - Reason: The lightweight, breathable fabric is perfect for warm weather, and the brown color adds a trendy earthy tone that suits an edgy vibe.
2. Bottom: Ripped Denim Shorts
 - Reason: Shorts are ideal for a high temperature of 92°F, keeping you cool. The ripped style adds an edgy element while fitting the casual nature of the festival.
3. Shoes: White Leather Sneakers
 - Reason: Comfortable for walking and dancing at the festival, and the white color complements the outfit while enhancing the casual and edgy feel.
4. Jacket: Black Leather Jacket
 - Reason: While it may be warm during the day, a leather jacket is perfect for cooler temperatures in the evening (down to 66°F) and adds a classic edgy touch to the outfit.

Summary:

This outfit keeps you comfortable and stylish for a music festival with high temperatures, while also being prepared for the evening chill. The combination of a henley top, ripped shorts, and white sneakers strikes a balance between casual and edgy, making it a perfect fit for the event's atmosphere.

Example #2



Example #3

Query: “I’m going to the fanciest event at the UVA School of Data Science”

Location: Antarctica

User: Anjali

Aesthetic: Formal



Example #3

For the fancy, professional event at the UVA School of Data Science, I recommend the following outfit, taking into account the extreme cold weather, formality, and current trends:

Outfit Recommendation:

1. Dress: White Lace Dress
 - Reason: This dress is formal and elegant, fitting the professional aesthetic of the event. Its lace detailing adds sophistication, and the white color keeps it classic and fresh.
2. Jacket: Brown Fur Coat
 - Reason: Given the extreme cold temperatures (high of -68°F), a warm coat is essential. The brown fur coat provides insulation while complementing the white lace dress, adding a luxurious touch.
3. Shoes: Sassy - Tan Leather Ankle Boots
 - Reason: These boots are stylish and provide the necessary warmth for the icy weather. The tan color works well with the brown fur coat and maintains a polished look appropriate for the event.

Summary:

This outfit is designed to keep you warm while adhering to the formal dress code. The combination of the white lace dress, brown fur coat, and tan leather ankle boots ensures you look sophisticated and stylish while being protected from the harsh weather conditions.

Example #3



Challenges & Limitations

- Pinterest API Access:
- Data size & Storage **×**
- Scope management



Conclusion & Future Work

Conclusion

This project shows how LLMs can be used to create a **personal, context-aware virtual fashion assistant**. By combining computer vision, weather data, and real-time trend analysis, this LLM provides **personalized outfit suggestions** that are practical and fashion-forward.



Future Work

Social Features

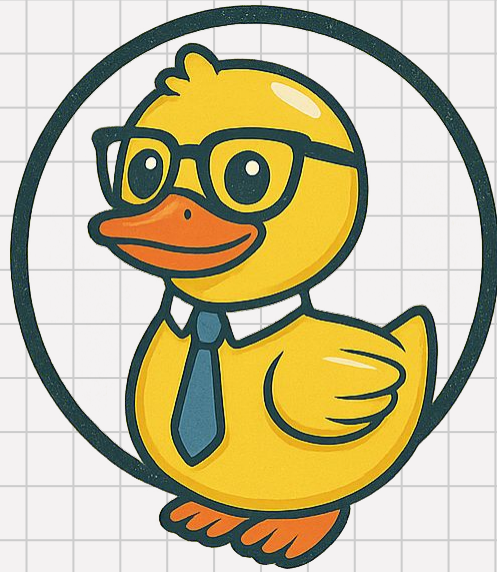
Sharing outfits with friends, sharing closets across friends to increase outfit choices, or commenting on each other's outfits

Retailers

Integrate retailers to include recommendations for new clothes to pair with an existing closet and price comparisons, enabling real-time shopping suggestions

Discovery

Introduce a "discovery" or "inspo" mode where users get outfit ideas for unfamiliar styles or trends, broadening fashion horizons.



**Dress
Code**

Thank you!